What's new in tankers?

A roundup of the latest developments in tanker design, construction, equipment and services

Laurin Maritime picks up speed with Tarantella series

Laurin Maritime has taken delivery of the Tarantella, the first in a series of six 47,500 dwt IMO II chemical/product tankers from the Trogir yard in Croatia. Laurin was one of the first shipowners to promote the combined product/chemical tanker concept and remains one of the owners that is consistently able to optimise the opportunities provided by the dual carriage capabilities of such ships. The new sextet from Trogir, which incorporate a range of innovative features, will reinforce these traditional Laurin strengths.

The Tarantella is fitted with a Becker rudder and two medium-speed diesel engines which are connected through a reduction gear to a single Kamewa controllable pitch propeller. The arrangement not only provides the ship with propulsion system redundancy but also a high degree of manoeuvrability and performance. Class society DNV has awarded the series with a notation denoting they have been built for a 40-year service life.

The ship has 16 tanks, including two slop tanks, and is able to handle up to eight grades of cargo simultaneously, including high specific gravity cargoes. The 14 cargo tanks are equipped with electrically driven submerged centrifugal pumps supplied by Marflex. Laurin chose electric drive rather than the hydraulic drive traditionally favoured due to the improved performance of electrics in terms of cargo discharge rates and reduced noise levels.

Laurin has also opted to differ from the norm as regards inert gas supply for the new series. Rather than go for the more traditional inert gas plant, the Tarantella is fitted with a large Smit Sinus onboard nitrogen generator for cargo blanketing and tank purging duties. This equipment enables high-specification chemicals to be loaded without the need for extensive cleaning of the tanks to remove inert gas soot.

The original Laurin Maritime chemical/product tankers were 45,000 dwt ships. This size not only enabled the carriage of full cargoes of large size lots of so-called simple, or commodity, chemicals, but also allowed the owner to identify and serve those trades where such large-volume cargoes were becoming available.

One of the key regular services the shipowner has concentrated on is the carriage of chemicals eastbound transatlantic out of the US Gulf to Europe, returning to the US with full cargoes of clean petroleum products. This trade pattern helps to reduce empty ballast legs and the new Tarantella series of ships, with their slightly larger deadweight and extensive list of approved chemical cargoes, will enable Laurin to consolidate its position on the transatlantic routes.

The Tarantella and her sisters are also evidence of the comeback of Croatian shipyards following the political upheaval of the civil wars within the former Yugoslavia in the early 1990s. Croatia is now the world's fifth largest shipbuilding nation. Of the 48 ships on order at the country's four largest yards, 39 are tankers and, of the tankers, 35 are product tankers.

Iran takes first Chinese VLCC

Dalian New Shipbuilding Heavy industries, formerly Dalian New Shipyard, has delivered the 300,000 dwt Iran Delvar to the National Iranian Tanker Company (NITC), the first very large crude carrier (VLCC) to be built in China. The tanker is fitted with a slow speed diesel developing 37,000 bhp from HSD Engine of Korea.

The Iran Delvar is the first in a series of five such tankers under construction at the yard for NITC. The other ships will be delivered through the end of 2003. All are

designed with a fatigue lifespan of 40 years and the class society DNV participated in the design work on the series.
Iran is replacing its entire VLCC fleet, which dates from the mid-1970s. The owner is also taking delivery of a series of five 310,000 dwt crude carriers from Hyundai Heavy Industries in Korea. The five ship series at Dalian is valued at $37m, the largest shipbuilding contract ever placed in China.
Dalian is currently enlarging its main building dock to enable the simultaneous construction of one and one-half VLCCs. When the NITC ships were ordered in 1999, Dalian was the only shipyard in China equipped to build ships of VLCC size. However, today New Century Shipbuilding and Shanghai Waigaoqiao Shipbuilding also possess that capability.

MOL uses NAC5 steel in upper decks

Mitsui Osk Lines (MOL) has announced that it will be using Anti-Corrosion No. 5 (NAC5) steel, developed by NKK Corp, in the upper decks of two VLCCs it is currently having built. It is believed that the use of this steel will hinder upper-deck corrosion and pitting by extending the life of the shop primer, thereby extending the service life of the ships by up to five years.
The two oil tankers under construction will also use the Ax-Bow bow design, developed by NKK Corp in cooperation with Osaka University and originally applied to the Capesize bulk carrier Kohyohsan. According to NKK, the Ax-Bow design improves ship propulsion in heavy seas and reduces fuel consumption.

Milford Haven trials tug escorts

Milford Haven Port Authority is carrying out trials with the use of escort tugs for inbound tanker traffic over a period of two years. Because the loss of vessel propulsion or steering, partial or outright, has the potential to cause a serious marine incident, some ports in the US, Norway, Canada and the UK have introduced requirements for special tugs to escort tankers transiting their waters. In the case of Milford Haven, the grounding of the Sea Empress in 1996 prompted a wide-ranging review of measures which could improve tanker safety, one of which is tug escorts.
Active tanker escorting, of the type being tested at the South Wales port, is a complex procedure which requires fully trained tug crews and an awareness of the risks involved on the part of pilots, bridge teams and the port authority if the operation is to be effective and not itself give rise to serious accidents. In active escorting the tug is tethered to the stern of the tanker and proceeds, stern-first, in the direction of the tanker. With this arrangement the tug can make use of the hydrodynamic forces created by the incoming flow of water on its underwater body and skeg, and only a small measure of crosswise steering power is needed by the tug to maintain the most effective position/heading for the tanker.
n order to ensure that maximum benefit derives from the escort tug operations, tug masters and pilots at Milford Haven have participated in simulator training exercises. Svitzer Wijsmuller, the port tug operator, is using the tugs Milgarth and Anglegarth S in the trials. The vessels were purpose-built to assist with handling tanker traffic in Milford Haven and are among the largest tugs in the UK.
In November 2001 two days of trials with the Anglegarth and the C H Sorensen tanker Magnitude at the entrance to Milford Haven showed that the tug is capable of stopping and turning a laden tanker at speeds up to and including 12 knots. As part of the exercise, connect and disconnect trials were successfully carried out in 2.5 metres of swell.
Following these tests, passive escorting, i.e. with the tug untethered, was introduced at Milford Haven earlier this year. This has now given way to the current two-year period of active escorting of inbound, laden tankers of 50,000 dwt and above.

Two Brazilian contracts for KMSS

Kongsberg Maritime Ship Systems (KMSS) recently won two new contracts, both with Brazi-lian companies. KMSS will supply oil company Petrobras with Autrocargo cargo monitoring systems for two Floating Product-ion, Storage and Offloading Vessels (FPSOs) currently under construction in Singapore and Brazil. Petrobras has a total of 11 FPSOs in operation and under construction, eight of which are fitted with the Autrocargo system.

The Autrocargo systems being supplied to Petrobras consist of cargo tank radar antenna units; temperature sensors; inert gas pressure transmitters; and independent 95 per cent and 98 per cent high level alarms. KMSS will also provide Petrobras with pressure transmitters for draft, ballast and service tank level measurements, as well as two computer workstations.

KMSS' second Brazilian contract is for LPG operator Metalnave SA. The maritime automation company will supply its Bridgeline integrated bridge system and its Datachief C20 machinery automation system to three of Metalnave's tankers.

St Lawrence Seaway in AIS first

The Saint Lawrence Seaway Development Corporation and its Canadian partner, the St. Lawrence Seaway Management Corporation, launched their new automatic vessel identification system (AIS) last month. The system, which is the first to be fielded on a North American waterway, is undergoing final tests, and will become mandatory for all commercial vessels transiting the Seaway at the start of the 2003 navigation season.

The two authorities have been developing the project for 10 years, monitoring the evolution of the technology and choosing a system best suited to its needs. AIS uses global positioning technology and the latest communication via universal VHF radio frequency to share vital marine navigation data from ship-to-ship, shore-to ship, and ship-to-shore in real time.

Using the AIS communications protocol, vessels equipped with a transponder can be tracked by the three Seaway Vessel Traffic Control Centres (TCCs), which in turn transmit information back to the ships. All Seaway traffic is thus aware of the exact location of any vessels in their vicinity, in any kind of weather, as well as the type, size, course and speed of these vessels. In addition, the Seaway TCCs transmit data such as lock order turn, water levels, current and wind speed and direction, and Seaway alerts or advisories, which a laptop computer onboard ship can call up instantly.

The information is displayed on a virtual map of the Seaway, which changes as the data change.

Besides the navigational safety improvements likely to accrue, AIS offers law enforcement officials a much-needed tool for responding more quickly and effectively in any emergency. System administrators will be able to schedule inspections and pilotage services in a more timely manner, effect better speed control, and schedule lockages and vessel tie-ups more efficiently. This should result in savings to shipowners through fuel economies and reduced transit times.

New Svanehoj pumps for small LNGCs

Svanehoj, part of the Hamworthy KSE group, has developed a version of its traditional multistage deepwell cargo pump for LPG carriers for use onboard the new generation of small LNG carriers being built for coastal distribution operations.

Two such ships are currently being built, but there is a promise of more such vessels in future. The Bijlsma yard in the Netherlands is building a 1,100 cu m LNG carrier for Knutsen OAS which will be used to distribute LNG from a small terminal in Bergen along the west coast of Norway on behalf of Naturgass Vest. In Japan Higaki Shipbuilding, part of the Kawasaki Heavy Industries (KHI) group, is building a 2,500

cu m ship which will be used to distribute LNG along the Japanese coast on behalf of the Shikoku Gas and Okayama Gas companies.
Unlike the Bijlsma ship, which will use cargo boil-off and diesel in a special dual-fuel diesel engine, the Higaki tanker will have heavily insulated IMO Type C cylindrical cargo tanks that will not give rise to any cargo boil-off during the relatively short voyages. This will allow the use of a traditional marine diesel engine. According to KHI, the absence of boil-off gas during the voyage will make the ship "as simple to operate as an ordinary fully pressurised LPG carrier".
Svanehoj reports that it has been a relatively straightforward project to develop a new version of pump from its existing range capable of handling LNG cargoes at temperatures of -163°C. However, because the design work has only recently been completed, the company lost out on the orders for cargo pumps for the first two coastal LNG carriers now under construction. Shinko submerged electrical pumps have been specified for these vessels.
Svanehoj states that with its system standard pump motors are placed on deck, obviating the need for any power cables to pass through the cargo tanks, as is the case with the Shinko pumps, and facilitating maintenance.

Martek launches vapour control system

Martek Marine Ltd has announced the release of VECSAFE, its oxygen monitoring and vapour emission control system. The system consists of the MMS3000 oxygen sensor and the MMS200 pressure sensor, both controlled by the GDS404 control panel. According to Martek, operation is fully automatic and crewmembers do not have to adjust settings.
The system was specifically designed to comply with the US Coast Guard's regulations on vapour control systems, which states that "if the cargo tanks on a vessel are inerted, the service vessel must have means to inert the vapour transfer hose prior to transferring cargo vapour and also have an oxygen analyser with a sensor or sampling connection fitted within three meters (9.74 ft) of the vessel vapour connection". Martek claims that VECSAFE is fully compliant with this requirement. The system also has audio and visual alarms, remote alarm annunciators and repeat alarm panels for the bridge.

Anders Utkilens installs SIS software

Chemical tanker operator Anders Utkilens Rederi (AUR) has implemented two software modules from maritime software company Star Information Systems onboard all 16 of its vessels. The first of the two, Star Event, is designed to help operators to report accidents, near-misses and non-conformities internally and to learn from these experiences in order to avoid future accidents. The other module, Star Document, is a documentation system which enables operators to handle documents, forms and reports. Star Document can be used to issue and handle documents; handle certificates; generate reports; and replicate data between the ship and the shore. In addition, says SIS, Star Document can be used as a means of standardizing a company's reporting procedures across a fleet. Both modules are based on Windows and Excel.

Better ships at lower cost with Tribon M2

Tribon Solutions has introduced a new version of its Tribon Shipbuilding system with features which are claimed to provide reductions in ship construction time and costs. Called Tribon M2, the system has enhanced applications for machinery, piping, outfit and cabling while its data processing capabilities have been upgraded to provide safer and better management of the Tribon Product Information Model (PIM).
"With Tribon M2 time and costs in three of the most important phases in the shipbuilding process will be saved," says Bruce Douglas, vice-president sales at

Tribon Solutions. "In the early design phase improved coordination possibilities enable internal and external work to be carried out in parallel and, hence, calendar time to be saved.
"In the detail design phase man-hours are reduced through efficient processing of production information and documents for the manufacture and assembly tasks. Finally, in the production phase material costs are reduced and man-hours saved thanks to the high quality of the manufacturing information and the resultant fabricated pieces. This leads to better fitting, less rework and full utilisation of the machines in the workshops."

Wallem and Drew get RealMarine

In spite of the uncertainty and the prevailing scepticism of the shipping industry with respect to e-commerce, a new player has entered the field, an enterprise called RealMarine, backed by marine chemical supplier Drew Marine and Hong Kong-based shipmanagement company Wallem. The venture is called RealMarine and its first offering is a web-based procurement system called Total Procurement System (TPS). Although RealMarine is a new entity, TPS is not: it is in fact the procurement system that Wallem developed for its own use and has been using for the past seven years. The development of the system was instigated by Patrick Slesinger, currently Wallem's chief information officer, when he arrived at the company seven years ago. It allows crew onboard Wallem's managed vessels to submit requisitions via satellite to the purchasing team in the shipmanagement company's shore-side office, and includes the network through which the shore-based team sends its requests for quote out to suppliers. The system, as used by Wallem, encompasses 200 suppliers in 24 different countries and to date, over 100,000 requisitions have been passed through the system.
According to Wallem, the system is beneficial to all of those involved. Wallem claims that it has been able to double the efficiency of its procurement system and reduce the cost associated with the procurement process by 20 per cent; that owners stand to benefit from the financial transparency the system affords; and that suppliers also are able to become more efficient as a result.
Currently, RealMarine is fully owned by Wallem, but upon evaluation after the end of a validation period of indeterminate length, the shipmanagement company will sell a 50 per cent stake to Drew Marine. Wallem will be responsible for the development of the product, through its software development arm based in the Philippines, DevCo, and Drew Marine will handle the marketing of the product, through its network of sales offices around the world.
The new venture is headed up by Harry Gilbert who was, up until recently, the CEO of Wallem Shipmanagement (Gilbert recently retired and is now devoting himself to RealMarine). He points out that TPS is a system designed by the maritime industry for the maritime industry and that RealMarine has an advantage over its competitors in that neither Wallem nor Drew Marine have had to invest much money in getting it going as a commercial enterprise. The cost of the development of the product itself was absorbed by Wallem several years ago and Drew Marine' sales network is already in place through its existing business of supplying marine chemicals to the shipping industry.
RealMarine does, however, have one major outlay to make before it can get off of the ground. The company is offering TPS to the shipping industry for free during a validation period, the length of which has yet to be determined. The cost of burning the CD-ROMs and distributing and implementing the software will be borne by Wallem and Drew Marine. According to both Gilbert and Paul DeVivo, vice-president and general manager of Drew Marine, the duration of the validation period will be determined by the market: if uptake is quick and the enthusiasm is there, RealMarine will go for a full scale launch, and if the market indicates that it is unreceptive to another electronic procurement product or the concept of electronic procurement as

a whole, that will be the end of the affair, and Wallem and Drew will return to business as usual.

It's a curious way of approaching the market which belies the confidence that Wallem and Drew Marine clearly have in the product - Wallem, for one, has been talking about the efficacy of its in-house procurement system for at least the past three years - but it is ultimately indicative of the caution with which companies have learned to proceed when it comes to talking about e-commerce in the shipping industry.